

STORM WATER MANAGEMENT CRITERIA FOR MALAYSIA  
GREEN HIGHWAY

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***Especially dedicated to:***

***My parents***

***Tuan Soh Tuan Losin & Siti Fatimah Mahamad***

*Who give motivation and loves...*

***My beloved supervisor, Prof. Dr. Muhd Zaimi Abd Majid***

*Who give the guidance with continuously in finishing this thesis...*

***All my friends***

*For their helping and loyalty of this friendship...*

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## **ABSTRACT**

Green highway is environmentally responsible and sustainable in all aspects and it is also related to the effort to leave the project area better than before in improving safety and functionality. There are many elements to be considered in order to develop the green highway index. Storm water management is one of the important scopes to establish the green highway index. In fact, improper management on storm water for highway infrastructure will create significant problem such as flooding, surcharge and channel system blockage. As a result, it creates dangerous environment to road users when water ponding on the road surface. The environmental friendly approach should be applied when dealing with storm water runoff. Therefore, this study is focusing on storm water management towards developing the green road index. The current approach will be highlighted in this study starting from reviewing the literature, develop the questionnaire and thus distribute the designed questionnaire to the respondents. This study consists of survey and interview according to the design questionnaire related to green highway criteria. The collected data has been analyzed by using SPSS score index and statistical analysis. The finding of this study is storm water management criteria and element which contributing for new green highway development has been established. In conclusion, score point for each element criteria been determined as a guide for new highway assessment.

## **ABSTRAK**

Lebuhraya hijau adalah memberi impak terhadap alam sekitar dan mapan dalam semua aspek. Ia juga berkaitan dengan usaha untuk meninggalkan kawasan projek yang lebih baik berbanding sebelum ini dalam meningkatkan fungsi dan keselamatan. Terdapat banyak unsur yang perlu dipertimbangkan dalam usaha untuk membangunkan indeks lebuhraya hijau. Pengurusan hujan adalah salah satu skop penting untuk mewujudkan indeks lebuhraya hijau. Malah, pengurusan air hujan yang tidak teratur untuk infrastruktur lebuhraya akan mewujudkan masalah besar seperti banjir, dan saluran tersumbat sistem. Akibatnya, ia mewujudkan persekitaran yang berbahaya kepada pengguna jalan raya apabila air bertakung pada permukaan jalan. Oleh itu, kajian ini memberi tumpuan kepada pengurusan air hujan ke arah membangunkan indeks jalan hijau. Pendekatan semasa akan ditonjolkan dalam kajian ini bermula dari mengkaji kesusasteraan, membangunkan soal selidik dan seterusnya mengedarkan soal selidik yang disediakan untuk responden. Kajian ini terdiri daripada kaji selidik dan temuduga mengikut soal reka bentuk berkaitan kriteria lebuhraya hijau. Data yang dikumpul telah dianalisis dengan menggunakan SPSS indeks skor dan analisis statistik. Hasil daripada kajian ini adalah kriteria pengurusan air hujan dan elemen yang menyumbang untuk pembangunan lebuhraya hijau baru telah ditubuhkan. Kesimpulannya, titik perincian untuk setiap kriteria unsur telah ditentukan sebagai panduan bagi penilaian lebuhraya baru.